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The Mineral Industry of Greece

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The Mineral Industry of Greece

By Walter G. Steblez[1]

Greece's mineral industry showed a downward production trend in 1987. The output of bentonite, chromite, lead, magnesite, nickel, pyrite and zinc declined compared with that of 1986; only barite, bauxite, lignite and kaolin showed slight gains during the year. The production declines in the mineral sectors paralleled the overall performance of Greece's industry. In 1987, industrial production declined by 2% compared with that of 1986, and was below the output level of 1980. Compared with 1980, Greece's industrial output from 1981 to 1987 registered only slight increases during 1981, 1985, and 1986. According to the country's Statistics Bureau, out of 20 industrial branches, 12 remained below 1980 production levels; these included the industrial mineral, metallurgical and metals fabricating sectors.[2] Moreover, the growth rate of the country's gross domestic product in 1987 declined compared with that of 1986. In 1987, Greece continued to be an important European producer of bauxite, cement, industrial minerals, ferroalloys and nonferrous metals. The Greek-Soviet alumina project and the uncertainty about the future of Larco S.A., Greece's ferronickel producer, continued to be the main issues of the country's mineral industry in 1987. By yearend, all the details for the construction of the alumina plant were finalized, including its relocation. Larco came under scrutiny for possible closure and/or privitization.

In the fuels sector, a dispute arose between the Governments of Greece and Turkey over petroleum exploration rights in the Aegean. There was also a dispute between the Government of Greece and the Prinos oil consortium, the North Aegean Petroleum Corp. (NAPC), concerning the nationalization of the consortium's assets.

Government Policies and Programs.—The Government policy instituted in 1981 to promote state control over the economy and mineral industry was reappraised in 1987 owing to (1) the decline of incentives in Greek industry and competitiveness of goods and services in the market, (2) a steep drop in private investment capital in the Greek economy, and (3) pressure from the European Economic Community (EEC) to establish a free, unified market covering all EEC member states by 1992. To meet the 1992 deadline and reverse the decline of the country's economy, the Government waived a number of restrictions placed on state-controlled enterprises that earlier prevented normal business transactions. These policies restricted the hiring and firing of state employees and abolished management incentives. The Greek Government also abandoned the practice of worker control of day-to-day commercial operations.[3] At the same time, the Government made serious efforts to attract foreign investment in the alumina, bauxite, lignite, and steel industries. The results were less than satisfactory. Most investors, who planned from 5 to 15 years into the future, lost confidence in the Greek investment climate owing to periodic reversals of Government regulations, and the Government's longstanding policy of bringing most of the country's major industries under its control.

In 1987, more than one-half of Greece's mining enterprises were state-owned, and efforts to nationalize NAPC's assets during the year added even more uncertainty to stated Government aims.

PRODUCTION

The mineral industry's overall negative performance continued to reflect adverse factors such as the decline of the U.S. dollar and strong competition in the world market. The Government's dominance of the industry removed the flexibility necessary to react effectively to new market situations. Ferronickel production in Greece practically ceased at a time when its market value rose from $4 to $17 per ton. Aluminium de Grèce S.A., a subsidiary of Pechiney of France; the Bodossakis Group (mixed sulfide and lead and zinc concentrates); the Eliopoulos Kyriacopoulos Group (barite, bauxite, bentonite, and perlite); Magnomin General Mining Co. S.A. (magnesite and dead-burned magnesite); and the Titan Cement Co. S.A. remained Greece's major private companies. Major state-owned mineral interests included operations for the production of asbestos, bauxite, cement, chromite, lead, lignite, petroleum and steel.

Table 1.—Greece: Production of mineral commodities[1]

(Metric tons unless otherwise specified)

Commodity[2]	1983	1984	1985	1986[p]	1987[e]
METALS					
Aluminum:					
Bauxite, gross weight thousand tons	2,455	2,296	2,453	2,230	2,400
Alumina, gross weight do.	410	482	380	470	480
Metal:					
Primary	136,181	136,244	125,222	126,000	126,000
Secondary[e]	7,000	7,000	7,000	7,000	7,000
Chromium: Chromite:					
Run-of-mine ore	83,202	123,186	214,081	217,979	220,000
Marketable products:					
Direct-shipping ore[e]	7,000	11,000	15,000	[r]16,000	16,000
Concentrate	20,517	50,364	58,948	60,062	63,000
Iron and steel:					
Iron ore and concentrate, nickeliferous:[3]					
Gross weight thousand tons	1,343	1,929	2,245	[e]2,200	2,200
Fe content do.	572	810	920	[e]900	900
Metal:					
Pig iron do.	138	138	[e]140	[e]160	160
Ferrochromium	[e]18,000	32,974	34,436	38,260	38,000
Ferronickel[e]	50,000	53,000	63,800	[e]10,224	5,000
Steel, crude thousand tons	858	895	985	[e]890	950
Lead:					
Mine output, Pb content[e]	20,000	22,000	20,000	[r]19,000	18,000
Metal, refined, primary[e 5]	--	--	15,000	16,000	16,000
Manganese:					
Ore, crude:					
Gross weight	40,140	28,170	29,820	32,585	35,000
Mn content	12,042	8,451	8,946	10,759	11,500
Concentrate:					
Gross weight	4,636	5,447	5,085	4,560	5,000
Mn conent	2,272	2,669	2,478	2,234	2,450
Nickel:					
Ni content of nickeliferous iron ore[e 6]	13,000	16,700	22,000	[r]14,400	12,000
Ni content of alloys	12,858	15,829	15,952	2,581	1,300
Silver: Mine output, Ag content[e] thousand troy ounces	[4]1,797	1,800	1,700	1,700	1,700
Tin metal, secondary[e]	40	40	40	40	40
Zinc mine output, Zn content[e]	21,300	22,500	21,500	22,500	21,000
INDUSTRIAL MINERALS					
Abrasives, natural: Emery	7,007	8,100	7,729	7,500	8,000
Asbestos:					
Ore thousand tons	2,490	3,766	3,705	3,927	3,700
Processed	31,811	45,376	46,811	51,355	48,000
Barite:					
Crude ore	90,187	24,822	[e]26,000	2,227	5,900
Concentrate	30,262	2,423	3,283	2,305	2,300
Cement, hydraulic thousand tons	14,196	13,521	13,669	13,341	13,400
Clays:					
Bentonite:					
Crude	688,941	778,722	886,972	1,317,825	1,200,000
Processed	214,198	260,941	239,861	352,587	300,000

See footnotes at end of table.

Table 1.—Greece: Production of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity[2]	1983	1984	1985	1986[p]	1987[e]
INDUSTRIAL MINERALS —Continued					
Clays —Continued					
Kaolin:					
Crude	60,749	92,407	87,623	141,210	145,000
Processed	6,032	10,376	7,449	3,532	3,700
Fluorspar, grade unspecified[e]	300	300	300	300	300
Gypsum and anhydrite[e]	[r]645,431	690,000	690,000	650,000	650,000
Magnesite:					
Crude thousand tons	891	1,064	846	944	910
Dead-burned	251,692	316,119	239,837	248,114	220,000
Caustic-calcined	113,026	121,227	94,866	126,069	120,000
Nitrogen: N content of ammonia[e]	[r]227,247	230,000	230,000	230,000	230,000
Perlite:					
Crude	206,882	274,360	239,768	357,347	360,000
Screened	151,601	177,571	161,161	184,148	170,000
Pozzolan (Santorin earth) thousand tons	[r]800	906	938	1,005	1,000
Pumice	500,460	626,971	620,328	860,047	625,000
Pyrites, gross weight	143,518	164,949	173,252	150,245	[r]149,072
Salt, all types thousand tons	159	133	150	[r]150	150
Silica (probably silica sand)[e]	[r]1,908	[r]38,892	38,000	38,000	38,000
Sodium compounds:[3]					
Carbonate	1,000	1,000	1,000	1,000	1,000
Sulfate	[r]7,173	9,000	9,000	[r]8,000	7,000
Stone: Marble[e] cubic meters	[r]138,492	[r]132,332	150,000	150,000	150,000
Sulfur:[4]					
S content of pyrites thousand tons	[r]67	[r]78	78	[r]66	70
Byproduct of petroleum do.	[r]5	[r]5	5	5	5
Natural gas do.	115	120	120	[r]130	130
Total do.	187	203	203	[r]201	205
Talc and steatite	2,166	1,712	1,725	17,310	1,800
MINERAL FUELS AND RELATED MATERIALS					
Coal including briquets:					
Lignite thousand tons	30,580	31,576	35,962	37,976	[r]43,100
Lignite briquets[e] do.	[r]52	120	120	110	120
Coke:[5]					
Coke oven do.	300	300	300	305	305
Gashouse do.	15	15	15	16	18
Gas:					
Manufactured, gasworks[e] million cubic feet	15	15	15	15	15
Natural do.	[r]5,000	3,224	2,195	[r]2,200	2,200
Petroleum:					
Crude thousand 42-gallon barrels	[r]10,000	9,688	9,655	[r]9,500	9,600
Refinery products:					
Gasoline do.	[r]14,500	14,136	16,592	[r]15,000	16,000
Jet fuel do.	[r]13,000	11,696	10,984	[r]11,000	11,000
Kerosene do.	[r]300	217	302	[r]300	300
Distillate fuel oil do.	[r]29,000	28,378	24,521	[r]25,000	26,000
Residual fuel oil do.	[r]35,000	29,417	27,279	[r]28,000	28,000
Lubricants do.	[r]650	630	822	[r]800	800
Other do.	[r]3,400	3,852	3,461	[r]3,500	3,500
Refinery fuel and losses do.	[r]4,500	3,521	3,899	[r]4,000	4,000
Total do.	[r]100,350	91,847	87,860	[r]87,600	89,600

[e]Estimated. [p]Preliminary. [r]Revised.

[1]Table includes data available through July, 1988.

[2]In addition to the commodities listed, a variety of other crude construction materials (clays, sand and gravel, and stone) is produced, but output is not reported, and available information is inadequate to make reliable estimates of output levels. Cobalt is also produced and is included with "Nickel."

[3]Ni content is also reported under "Nickel."

[4]Reported figure.

[5]Includes antimonial lead and hard lead.

[6]Also includes Co content.

TRADE

In 1987, Greece's total exports and imports both rose by 24% compared with those of 1986. The foreign debt remained at $17.7 billion, while the debt-service ratio, as a percent of exports, increased from 52% in 1986 to 59% in 1987. Principal U.S. mineral exports to Greece were coal and shredded iron and steel; principal imports were petroleum refinery products, hydraulic cement, and sheet steel. Greece continued to expand commercial contacts with the Council for Mutual Economic Assistance countries in the field of fossil fuels and metals. Within the EEC, Greece participated in the Integrated Mediterranean Program, an EEC development fund that would provide the capital required for some of the country's mineral projects.

Table 2.—Greece: Exports of mineral commodities[1]

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
METALS				
Aluminum:				
Ore and concentrate thousand tons	1,333	1,133	--	U.S.S.R. 398; Netherlands 151; France 113.
Oxides and hydroxides	187,400	135,565	--	Netherlands 44,050; United Kingdom 24,000; Egypt 23,511.
Ash and residue containing aluminum	610	238	--	Italy 175; United Kingdom 42; Netherlands 21.
Metal including alloys:				
Scrap	1,114	317	--	Italy 115; West Germany 94; Belgium-Luxembourg 67.
Unwrought	43,198	45,855	--	Italy 23,067; France 14,491; Lebanon 1,992.
Semimanufactures	49,549	39,118	5,677	Saudi Arabia 7,666; West Germany 6,372.
Antimony: Ore and concentrate	120	60	--	All to France.
Chromium:				
Ore and concentrate	8,830	10,964	--	West Germany 8,000; United Kingdom 1,044; Spain 80.
Metal including alloys, all forms	209	216	--	All to Netherlands.
Copper:				
Matte and speiss including cement copper	950	1,393	--	Belgium-Luxembourg 713; West Germany 572; Netherlands 102.
Ash and residue containing copper	1,117	547	--	West Germany 350; Spain 184; Belgium-Luxembourg 13.
Metal including alloys:				
Scrap	900	76	--	Belgium-Luxembourg 40; Spain 36.
Unwrought	22	21	--	All to Belgium-Luxembourg.
Semimanufactures	14,481	22,013	159	Italy 9,285; West Germany 2,301; Egypt 2,187.
Gold:				
Waste and sweepings value, thousands	--	$155	--	All to Belgium-Luxembourg.
Metal including alloys, unwrought and partly wrought do.	$218	$87	--	Italy $39; Belgium-Luxembourg $30; West Germany $18.
Iron and steel: Metal:				
Scrap	1,102	1,156	--	Italy 900; Belgium-Luxembourg 191; West Germany 65.
Ferroalloys:				
Ferrochromium	23,070	43,315	8,120	Japan 7,228; Belgium Luxembourg 6,500.
Ferromanganese	--	10	--	All to Belgium-Luxembourg.
Ferronickel	89,542	67,113	--	West Germany 36,093; United Kingdom 9,366; France 8,276.
Steel, primary forms	145,609	152,582	--	Turkey 48,901; Italy 34,928; China 22,544.
Semimanufactures:				
Bars, rods, angles, shapes, sections	246,678	312,392	--	Italy 89,053; Algeria 48,412; China 41,610.
Universals, plates, sheets	154,802	149,470	37,849	Belgium-Luxembourg 26,822; Italy 15,547.
Hoop and strip	53,548	28,837	1,391	Syria 16,382; West Germany 3,115; France 3,106.

See footnote at end of table.

Table 2.—Greece: Exports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
METALS —Continued				
Iron and steel: Metal —Continued				
Semimanufactures —Continued				
Rails and accessories	9	--	--	
Wire	1,474	7,334	--	Saudi Arabia 4,544; Libya 1,291.
Tubes, pipes, fittings	106,032	70,365	8,824	U.S.S.R. 38,598; Cyprus 4,509.
Castings and forgings, rough	252	270	--	Libya 133; West Germany 99; Sweden 24.
Lead:				
Ore and concentrate	23,000	38,800	--	Yugoslavia 19,300; Belgium-Luxembourg 12,500; U.S.S.R. 3,000.
Ash and residue containing lead	982	328	--	All to Spain.
Metal including alloys:				
Scrap	--	1	--	All to Cyprus.
Unwrought	2,167	3,442	--	Italy 1,503; West Germany 1,350; Egypt 500.
Semimanufactures	23	31	--	United Kingdom 19; Libya 11.
Magnesium: Metal including alloys, scrap	30	30	--	Italy 13; West Germany 12; Belgium-Luxembourg 5.
Manganese:				
Ore and concentrate, metallurgical-grade	--	501	--	Saudi Arabia 500; West Germany 1.
Oxides	--	11,135	296	Belgium-Luxembourg 3,978; U.S.S.R. 2,050; West Germany 994.
Molybdenum: Ore and concentrate	--	17,108	--	All to Netherlands.
Nickel:				
Ash and residue containing nickel	39,121	53,027	35,680	Egypt 15,512; Malta 1,275.
Metal including alloys:				
Scrap	18	--	--	
Semimanufactures	873	1,092	--	Netherlands 1,001.
Platinum-group metals:				
Waste and sweepings value, thousands	--	$18	$18	
Metals including alloys, unwrought and partly wrought do.	$782	$1,704	--	West Germany $1,070; United Kingdom $4.
Rare-earth metals including alloys, all forms	1	--		
Silver: Metal including alloys, unwrought and partly wrought value, thousands	$4,004	$8,361	--	France $5,708; Belgium-Luxembourg $2,652; Saudi Arabia $1.
Tin:				
Ash and residue containing tin	22	--		
Metal including alloys:				
Scrap	6	--		
Unwrought	1	--		
Semimanufactures	(r)	2	--	West Germany 1; bunkers 1.
Titanium: Metal including alloys, semimanufactures	--	5	--	All to Italy.
Zinc:				
Ore and concentrate	43,300	45,250	--	France 15,000; Belgium-Luxembourg 13,000; Yugoslavia 10,500.
Blue powder	--	35	--	West Germany 29; Egypt 6.
Matte	431	175	--	India 100; Belgium-Luxembourg 50; Italy 25.
Ash and residue containing zinc	1,322	1,526	--	West Germany 816; Belgium-Luxembourg 710.
Metal including alloys:				
Scrap	373	628	--	West Germany 411; Italy 217.
Unwrought	69	1	--	NA.
Semimanufactures	2	182	--	Italy 96; West Germany 88; Saudi Arabia 1.
Other:				
Ores and concentrates	143,390	59,123	4,250	Belgium-Luxembourg 38,868; Sweden 10,000; France 6,000.
Ashes and residues	21,371	20,063	--	New Zealand 12,105; Malta 5,711; United Arab Emirates 3,898.
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc	373,588	583,519	362,068	United Kingdom 92,539; Algeria 69,665.
Dust and powder of precious and semi-precious stones including diamond value, thousands	$399	$522	$378	West Germany $143.

See footnotes at end of table.

Table 2.—Greece: Exports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
INDUSTRIAL MINERALS —Continued				
Abrasives, n.e.s. —Continued				
Grinding and polishing wheels and stones	37	69	--	Switzerland 37; Iran 19; Turkey 8.
Asbestos, crude	29,387	44,468	--	Turkey 6,235; Italy 4,672; France 3,962.
Barite and witherite	14,000	22,109	--	Kuwait 22,000; Israel 109.
Boron materials: Elemental	--	(2)	--	NA.
Cement thousand tons	7,286	7,315	1,094	Egypt 2,629; Algeria 1,376; Saudi Arabia 1,306.
Chalk	1,652	642	--	Saudi Arabia 477; Bahrain 80; Cyprus 43.
Clays, crude:				
Bentonite	453,714	460,875	--	Sweden 59,008; Netherlands 58,898; West Germany 55,160.
Chamotte earth	1	14	--	All to West Germany.
Kaolin	15,314	27,585	--	Yugoslavia 19,630; Cyprus 7,163; Egypt 500.
Unspecified	187	69	--	All to Cyprus.
Diamond: Gem, not set or strung value, thousands	--	$22	--	All to Japan.
Diatomite and other infusorial earth	15	--		
Feldspar, fluospar, related materials, feldspar	20	100	--	All to Israel.
Fertilizer materials:				
Crude, n.e.s	365	104	--	All to Saudi Arabia.
Manufactured:				
Nitrogenous	11,282	66,444	--	Algeria 23,400; Turkey 13,600; United Kingdom 10,700.
Phosphatic	--	14,950	--	All to Algeria.
Potassic	33,110	58,175	--	China 34,500; Saudi Arabia 6,000; Belgium-Luxembourg 5,000.
Unspecified and mixed	74,399	62,722	--	China 30,750; France 15,975; Cyprus 8,003.
Gypsum and plaster	61	24	16	Egypt 8.
Kyanite and related materials	--	20	--	All to Cyprus.
Lime	500	151	--	Israel 150.
Magnesium compounds:				
Magnesite, crude	10,447	8,054	--	Italy 4,600; Netherlands 1,886; United Kingdom 1,565.
Oxides and hydroxides	332,618	326,871	74,860	West Germany 65,934; United Kingdom 38,538.
Mica: Worked including agglomerated splittings	1	--		
Precious and semiprecious stones other than diamond: Natural value, thousands	--	$22	--	All to Switzerland.
Pyrite, unroasted	110	--		
Salt and brine	11	75	--	West Germany 67; bunkers 8.
Sodium compounds, n.e.s.: Carbonate, manufactured	80	50	--	Cyprus 25; Saudi Arabia 25.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked	53,053	39,015	151	Saudi Arabia 12,660; Italy 8,188; West Germany 5,531.
Worked	140,206	173,067	9,317	Saudi Arabia 74,327; Tunisia 27,000; Algeria 17,904.
Dolomite, chiefly refractory-grade	1,300	3,183	--	United Kingdom 2,800; Saudi Arabia 209; Kuwait 59.
Gravel and crushed rock	9,535	3,460	--	Libya 2,505; Cyprus 920; West Germany 15.
Limestone other than dimension	--	6,830	--	All to Cyprus.
Quartz and quartzite	2,900	18,500	--	Italy 10,000; Switzerland 8,500.
Sand other than metal-bearing	26	33	--	Austria 28; Jordan 9.
Sulfur:				
Elemental, crude including native and byproduct	13,571	7,023	--	Algeria 3,000; Romania 2,500; Cyprus 1,399.
Dioxide	168	148	--	All to Cyprus.
Sulfuric acid	4,706	1,375	--	Lebanon 715; Cyprus 428; Saudi Arabia 128.
Talc, steatite, soapstone, pyrophyllite	109	245	--	All to Cyprus.
Vermiculite, perlite, chlorite	200,764	225,623	52,570	West Germany 88,460; United Kingdom 29,375.

See footnotes at end of table.

Table 2.—Greece: Exports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
INDUSTRIAL MINERALS —Continued				
Other:				
Crude	6,585	3,147	--	France 1,151; Bulgaria 605; United Kingdom 500.
Slag and dross, not metal-bearing	10,855	2,806	--	Saudi Arabia 1,789; Israel 500; West Germany 425.
MINERAL FUELS AND RELATED MATERIALS				
Coal: Bituminous	49,000	--		
Petroleum:				
Crude, thousand 42-gallon barrels	2,728	5,401	--	All to France.
Refinery products:				
Liquefied petroleum gas do.	401	390	--	Lebanon 147; Egypt 102; Syria 96.
Gasoline do.	4,866	3,327	1,232	France 1,815; Italy 147.
Mineral jelly and wax do.	(2)	--	--	
Kerosene and jet fuel do.	3,458	2,979	2,550	Netherlands 221; Egypt 97.
Distillate fuel oil do.	1,506	920	192	France 299; Singapore 101.
Lubricants do.	697	740	29	Italy 164; Egypt 157; France 53.
Residual fuel oil do.	5,744	4,486	652	Bulgaria 1,325; United Arab Emirates 692.
Bitumen and other residues do.	1	(2)	--	All to Cyprus.
Bituminous mixtures do.	2	3	--	Mainly to Cyprus.
Petroleum coke do.	11	--		

NA Not available.
[1]Table prepared by Josef Plachy.
[2]Less than 1/2 unit.

Table 3.—Greece: Imports of mineral commodities[1]

(Metric tons unless otherwise specified)

Commodity	1985	1986	Sources, 1986	
			United States	Other (principal)
METALS				
Alkali and alkaline-earth metals:				
Alkali metals	2,029	563	--	France 265; West Germany 226; Belgium-Luxembourg 53.
Alkaline-earth metals	21	12	--	All from France.
Aluminum:				
Ore and concentrate	1,406	102	--	All from China.
Oxides and hydroxides	332	505	(2)	United Kingdom 240; West Germany 201; Italy 36.
Metal including alloys:				
Scrap	50	69	--	United Arab Emirates 36; Cyprus 32; Yemen (Aden) 1.
Unwrought	3,644	7,180	--	Egypt 2,531; U.S.S.R. 1,464; Canada 1,001.
Semimanufactures	4,627	7,583	8	West Germany 3,247; United Kingdom 2,043; Italy 838.
Antimony:				
Oxides	11	13	--	United Kingdom 9; Switzerland 2; Italy 1.
Metal including alloys, all forms	71	13	--	All from Belgium-Luxembourg.
Arsenic: Oxides and acids	74	51	--	France 38; Belgium-Luxembourg 13.
Bismuth: Metal including alloys, all forms	1	1	--	Mainly from United Kingdom.
Cadmium: Metal including alloys, all forms	1	3	--	Belgium-Luxembourg 1; West Germany 1; Netherlands 1.
Chromium:				
Ore and concentrate	35,980	65,152	--	Albania 38,764; Republic of South Africa 18,628; Turkey 5,487.
Oxides and hydroxides	208	84	--	United Kingdom 59; West Germany 20; Romania 5.
Metal including alloys, all forms	--	(2)	--	Mainly from Belgium-Luxembourg.
Cobalt:				
Oxides and hydroxides	(2)	--		
Metal including alloys, all forms	5	8	1	Belgium-Luxembourg 3; West Germany 3.

See footnotes at end of table.

Table 3.—Greece: Imports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Sources, 1986	
			United States	Other (principal)
METALS —Continued				
Columbium and tantalum: Metal including alloys, all forms:				
Columbium (niobium)	(2)	--		
Tantalum	(2)	--		
Copper:				
Matte and speiss including cement copper	9,959	12,486	--	Chile 8,575; Belgium-Luxembourg 2,811; Zambia 1,504.
Oxides and hydroxides	92	39	--	Norway 24; West Germany 10; Austria 4.
Sulfate	1,373	872	6	Yugoslavia 849; East Germany 10.
Metal including alloys:				
Scrap	(2)	9	--	Yemen (Aden) 7; West Germany 1.
Unwrought	22,780	28,346	(2)	Chile 14,786; Zambia 5,186; Spain 2,235.
Semimanufactures	8,539	4,092	10	West Germany 1,014; Belgium-Luxembourg 910; France 615.
Gold: Metal including alloys, unwrought and partly wrought				
value, thousands	$25,872	$29,087	$37	Switzerland $26,135; West Germany $2,522; Austria $317.
Iron and steel:				
Iron ore and concentrate:				
Excluding roasting pyrite	339	2,038	--	China 1,772; Sweden 195; Netherlands 40.
Pyrite, roasted	14,950	--		
Metal:				
Scrap	313,312	455,305	130,595	U.S.S.R. 180,189; United Kingdom 62,518.
Pig iron, cast iron, related materials	8,589	20,335	22	U.S.S.R. 17,995; France 954; Yugoslavia 757.
Ferroalloys:				
Ferrochromium	43	46	--	West Germany 39; Sweden 6; France 1.
Ferromanganese	6,115	5,296	--	Portugal 2,824; Belgium-Luxembourg 1,393; Republic of South Africa 352.
Ferromolybdenum	6	8	--	Austria 3; West Germany 2; Italy 2.
Ferrosilicomanganese	6,642	6,525	--	Portugal 5,514; Spain 306; Republic of South Africa 189.
Ferrosilicon	2,807	3,901	--	France 1,281; West Germany 1,046; Norway 740.
Silicon metal	311	622	--	France 563; Italy 24; Norway 13.
Unspecified	424	397	(2)	France 265; Belgium-Luxembourg 62; Netherlands 38.
Steel, primary forms	943,412	958,697	--	Netherlands 261,457; United Kingdom 188,303; France 106,600.
Semimanufactures:				
Bars, rods, angles, shapes, sections	169,753	231,801	5	Italy 37,793; France 31,527; Yugoslavia 29,956.
Universals, plates, sheets	212,826	181,224	458	France 32,183; West Germany 27,570; Italy 16,625.
Hoop and strip	22,363	21,367	(2)	Bulgaria 7,600; West Germany 5,002; Belgium-Luxembourg 4,439.
Rails and accessories	1,104	19,912	--	Austria 10,376; France 4,291; West Germany 4,109.
Wire	10,874	13,042	(2)	Italy 2,489; West Germany 1,802; Belgium-Luxembourg 1,621.
Tubes, pipes, fittings	29,664	27,825	167	West Germany 9,100; Republic of South Africa 3,382; Italy 3,034.
Castings and forgings, rough	985	894	43	Italy 342; Belgium-Luxembourg 202; West Germany 168.
Lead:				
Ore and concentrate	9,783	9,009	--	Peru 3,342; Iran 2,850; Morocco 2,000.
Oxides	82	114	--	France 69; United Kingdom 38; West Germany 5.
Ash and residue containing lead	2	--		
Metal including alloys:				
Scrap	12	65	--	West Germany 49; Sweden 15.
Unwrought	9,752	1,937	--	Australia 972; West Germany 411; Belgium-Luxembourg 346.

See footnotes at end of table.

Table 3.—Greece: Imports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Sources, 1986	
			United States	Other (principal)
METALS —Continued				
Lead —Continued				
Metal including alloys —Continued				
Semimanufactures	22	99	--	Italy 62; West Germany 16; United Kingdom 8.
Lithium: Oxides and hydroxides	3	48	--	France 30; United Kingdom 12; West Germany 6.
Magnesium: Metal including alloys:				
Unwrought	382	550	--	Norway 276; France 272; United Kingdom 2.
Semimanufactures	18	20	(2)	West Germany 14; France 6.
Manganese:				
Ore and concentrate, metallurgical-grade	10,852	589	--	All from Turkey.
Oxides	5	133	--	Belgium-Luxembourg 102; France 15; Netherlands 15.
Metal including alloys, all forms	119	138	--	Belgium-Luxembourg 32; France 31; United Kingdom 31.
Mercury 76-pound flasks	58	116	NA	West Germany 58; France 29; United Kingdom 20.
Molybdenum: Metal including alloys:				
Unwrought	3	35	(2)	U.S.S.R. 14; France 13; West Germany 4.
Semimanufactures	11	3	(2)	West Germany 2.
Nickel:				
Ore and concentrate	--	2,896	--	All from Albania.
Matte and speise	207	--		
Oxides and hydroxides	4	--		
Metal including alloys:				
Scrap	--	61	--	United Kingdom 60; Netherlands 1.
Unwrought	134	120	(2)	Republic of South Africa 45; Canada 38; Belgium-Luxembourg 12.
Semimanufactures	34	45	(2)	West Germany 17; Italy 16; Hungary 5.
Platinum-group metals: Metals including alloys, unwrought and partly wrought value, thousands	$1,421	$1,519	$360	Switzerland $735; West Germany $324.
Rare-earth metals including alloys, all forms	--	2	--	All from Italy.
Selenium, elemental	(2)	1	--	All from Switzerland.
Silicon, high-purity	213	44	--	All from France.
Silver:				
Waste and sweepings value, thousands	$1	--		
Metal including alloys, unwrought and partly wrought do.	$4,780	$9,954	$8	Netherlands $5,911; Switzerland $2,304; West Germany $1,354.
Tellurium, elemental and arsenic	--	(2)	--	All from West Germany.
Tin:				
Oxides	5	10	--	Italy 7; United Kingdom 3.
Metal including alloys:				
Scrap	1	2	--	All from West Germany.
Unwrought	417	479	1	Malaysia 185; Brazil 168; Netherlands 57.
Semimanufactures	26	54	5	West Germany 26; Belgium-Luxembourg 10; United Kingdom 8.
Titanium:				
Ore and concentrate	299	233	--	Austria 199; Australia 20; Netherlands 14.
Oxides	357	174	--	Belgium-Luxembourg 60; West Germany 52; France 45.
Metal including alloys, semimanufactures	(2)	7	--	Italy 4; Switzerland 2; West Germany 1.
Tungsten: Metal including alloys:				
Unwrought	1	2	--	West Germany 1.
Semimanufactures	(2)	1	--	Mainly from Netherlands.
Uranium and/or thorium:				
Ore and concentrate	(2)	--		
Metal including alloys, all forms, thorium	--	(2)	(2)	Do.
Vanadium:				
Oxides and hydroxides	--	5	--	All from Netherlands.
Metal including alloys, unwrought	--	(2)		All from West Germany.

See footnotes at end of table.

Table 3.—Greece: Imports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Sources, 1986	
			United States	Other (principal)
METALS —Continued				
Zinc:				
Oxides	472	813	1	France 310; West Germany 238; Netherlands 94.
Blue powder	8	109	--	West Germany 93; Belgium-Luxembourg 14.
Metal including alloys:				
Scrap	40	--	--	
Unwrought	17,344	16,764	--	Belgium-Luxembourg 6,581; Netherlands 5,013; West Germany 993.
Semimanufactures	112	93	1	West Germany 35; Yugoslavia 30; Belgium-Luxembourg 18.
Zirconium:				
Ore and concentrate	216	234	--	United Kingdom 144; Austria 40; West Germany 30.
Metal including alloys, semimanufactures	(2)	(2)	(2)	
Other:				
Ores and concentrates	3,562	6,866	--	China 6,101; Australia 497; Sweden 150.
Oxides and hydroxides	14	5	--	All from Italy.
Ashes and residues	--	5,750	--	Do.
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc	40	291	12	Yugoslavia 336; Italy 42.
Artificial:				
Corundum	272	271	--	West Germany 160; Brazil 36; Italy 23.
Silicon carbide	961	1,228	5	West Germany 979; Italy 151; Netherlands 85.
Dust and powder of precious and semiprecious stones including diamond value, thousands	$3,446	$3,811	--	West Germany $2,826; Belgium-Luxembourg $444; Ireland $238.
Grinding and polishing wheels and stones	668	616	1	Italy 373; West Germany 71; Austria 46.
Asbestos, crude	4,653	1,271	--	Republic of South Africa 1,063; Cyprus 172; Canada 36.
Barite and witherite	2,590	5,175	--	West Germany 5,055; Turkey 120.
Boron materials:				
Crude natural borates	--	34	--	All from Italy.
Oxides and acids	59	170	--	Turkey 140; Italy 12; France 10.
Cement	784	522	--	Spain 328; Denmark 105; Netherlands 60.
Chalk	90	(2)	--	All from Italy.
Clays, crude:				
Bentonite	359	370	43	Netherlands 108; United Kingdom 92; West Germany 69.
Chamotte earth	3,076	3,317	--	China 2,017; Israel 925; Sweden 158.
Fuller's earth	--	7	--	France 5; Austria 2.
Kaolin	41,180	52,866	181	United Kingdom 42,114; Bulgaria 2,617; France 1,523.
Unspecified	10,929	8,347	--	United Kingdom 4,290; Italy 1,512; unspecified 2,540.
Cryolite and chiolite	2	12	--	Denmark 10; Italy 2.
Diamond:				
Gem, not set or strung value, thousands	$187	$224	$11	Belgium-Luxembourg $130; Hong Kong $25; France $21.
Industrial stones do.	$420	$479	--	West Germany $329; Belgium-Luxembourg $150.
Diatomite and other infusorial earth	1,693	2,145	766	United Kingdom 722; Denmark 197.
Feldspar, fluorspar, related materials:				
Feldspar	1,530	4,446	--	Norway 2,210; Italy 1,341; United Kingdom 115.
Fluorspar	9,642	11,720	--	Kenya 11,683; France 37.
Unspecified	3,097	5,743	--	Norway 5,486; West Germany 159; Switzerland 94.
Fertilizer materials:				
Crude, n.e.s	--	6	--	All from Italy.
Manufactured:				
Ammonia	129,174	179,525	1	Italy 60,690; West Germany 18,533; U.S.S.R. 16,345.

See footnotes at end of table.

Table 3.—Greece: Imports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Sources, 1986	
			United States	Other (principal)
INDUSTRIAL MINERALS —Continued				
Fertilizer materials —Continued				
Manufactured —Continued				
Nitrogenous	159,718	180,471	--	Italy 75,723; Bulgaria 86,259; Poland 24,940.
Phosphatic	18	1,005	--	All from West Germany.
Potassic	57,802	58,026	--	West Germany 24,125; Belgium-Luxembourg 10,477; Italy 10,349.
Unspecified and mixed	12,221	7,413	98	West Germany 3,505; Italy 2,759; Belgium-Luxembourg 613.
Graphite, natural	765	--	--	
Gypsum and plaster	914	1,423	34	Italy 1,042; West Germany 341.
Iodine	1	2	--	West Germany 1; Netherlands 1.
Kyanite and related materials	201	1,874	1	Netherlands 1,456; United Kingdom 214; West Germany 145.
Lime	62	122	--	West Germany 62; Turkey 60.
Magnesium compounds:				
Magnesite, crude	--	5,743	--	Turkey 5,741; France 2.
Oxides and hydroxides	27,034	18,786	1	Turkey 18,398; Austria 230; West Germany 56.
Other	38	20	--	All from Italy.
Mica:				
Crude including splittings and waste	474	514	--	Austria 407; Turkey 46; Switzerland 24.
Worked including agglomerated splittings	5	5	--	Spain 3; West Germany 1; United Kingdom 1.
Nitrates, crude	40	80	--	All from Belgium-Luxembourg.
Phosphates, crude	202,830	356,999	--	Tunisia 119,126; Senegal 117,507; Morocco 93,671.
Phosphorus, elemental	6	3	--	All from Sweden.
Pigments, mineral:				
Natural, crude	85	--	--	
Iron oxides and hydroxides, processed	1,265	1,158	--	West Germany 816; Spain 105; Italy 78.
Potassium salts, crude	--	7,831	--	All from France.
Precious and semiprecious stones other than diamond:				
Natural —value, thousands	$172	$168	$4	Thailand $61; Belgium-Luxembourg $15; Israel $14.
Synthetic —do.	$22	$65	--	Thailand $42; West Germany $11; Austria $7.
Pyrite, unroasted	41,354	19,092	--	All from Spain.
Salt and brine	48,973	68,321	--	Italy 50,430; Spain 11,118; Egypt 2,641.
Sodium compounds, n.e.s.: Carbonate, manufactured	35,009	72,660	--	Italy 10,720; Turkey 5,441; Belgium-Luxembourg 4,489.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked	1,808	1,143	--	Pakistan 419; Turkey 331; Italy 150.
Worked	320	239	(2)	Italy 132; Yugoslavia 65; West Germany 19.
Dolomite, chiefly refractory-grade	473	2,088	--	United Kingdom 1,727; West Germany 139; Italy 129.
Gravel and crushed rock	1,939	2,336	--	Belgium-Luxembourg 1,619; France 204; Italy 190.
Limestone other than dimension	(2)	--	--	
Quartz and quartzite	123	126	--	France 44; United Kingdom 40; West Germany 23.
Sand other than metal-bearing	75,897	97,052	1	Belgium-Luxembourg 40,797; Bulgaria 18,473; Albania 12,116.
Sulfur:				
Elemental:				
Crude including native and byproduct	46,749	101,073	--	Poland 68,215; France 32,897; Belgium-Luxembourg 10.
Colloidal, precipitated, sublimed	43	81	--	West Germany 65; France 16.
Dioxide	1	2	--	West Germany 1; Netherlands 1.
Sulfuric acid	34,258	23,828	--	Italy 20,701; Japan 3,086; Netherlands 18.
Talc, steatite, soapstone, pyrophyllite	2,086	2,609	53	Finland 767; Austria 466; France 342.
Vermiculite, perlite, chlorite	248	221	--	Italy 106; Republic of South Africa 95; China 20.

See footnotes at end of table.

Table 3.—Greece: Imports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Sources, 1986	
			United States	Other (principal)
INDUSTRIAL MINERALS —Continued				
Other:				
Crude	643	1,147	21	Belgium-Luxembourg 561; West Germany 191; Italy 149.
Slag and dross, not metal-bearing	209,443	434,509	--	Italy 35,702; France 50,674; Spain 25,310.
MINERAL FUELS AND RELATED MATERIALS				
Asphalt and bitumen, natural	3	42	--	United Kingdom 23; Belgium-Luxembourg 19.
Carbon:				
Carbon black	4,447	4,552	21	Italy 3,765; Romania 261; West Germany 233.
Gas carbon	1,133	2,718	--	Italy 2,301; West Germany 262; East Germany 95.
Coal:				
Anthracite	18	9,295	9,295	
Bituminous	1,549,893	1,832,852	751,987	Australia 588,472; Colombia 250,611.
Briquets of anthracite and bituminous coal	--	68,136	33,043	Australia 34,000; Czechoslovakia 93.
Lignite including briquets	2	3	--	Netherlands 2; West Germany 1.
Coke and semicoke	84,209	72,588	--	Japan 21,884; Italy 20,809; Egypt 10,384.
Peat including briquets and litter	10,262	10,495	--	U.S.S.R. 6,195; West Germany 1,569; Netherlands 1,167.
Petroleum:				
Crude, thousand 42-gallon barrels	91,409	77,526	--	Saudi Arabia 35,388; Libya 17,277; U.S.S.R. 9,010.
Refinery products:				
Liquefied petroleum gas do.	26	27	(2)	France 15; Italy 8; West Germany 4.
Gasoline do.	1,165	1,162	(2)	Saudi Arabia 297; Italy 251; Romania 213.
Mineral jelly and wax do.	29	29	(2)	West Germany 12; Israel 7; Hungary 3.
Kerosene and jet fuel do.	154	56	(2)	Italy 53; West Germany 1; Netherlands 1.
Distillate fuel oil do.	839	409	(2)	Bulgaria 144; Italy 105; U.S.S.R. 75.
Lubricants do.	633	886	3	Italy 367; Netherlands 363.
Residual fuel oil do.	5,978	4,086	318	Iraq 2,472; Saudi Arabia 387.
Bitumen and other residues do.	454	410	--	Albania 267; Italy 95; Spain 30.
Bituminous mixtures do.	7	1	(2)	Mainly from Italy.
Petroleum coke do.	344	578	387	U.S.S.R. 186; West Germany 4.

NA Not available.
[1]Table prepared by Jozef Plachy.
[2]Less than 1/2 unit.

COMMODITY REVIEW

METALS

Aluminum and Bauxite.—In preparation for the planned Greek-Soviet alumina plant, the Bauxites Parnasse Mining Co. S.A., a subsidiary of the Eliopoulos Kyriacopoulos Group and Greece's largest bauxite producer, completed a $3.5 million beneficiation plant and increased production and sales from 1.37 and 1.23 million tons, respectively, in 1986 to 1.45 and 1.31 million tons, respectively, in 1987. The company planned to expand mining capacity to supply about two-thirds of the proposed plant's feed requirements by startup of operations in the early 1990's.

The Governments of Greece and the Soviet Union signed an agreement in April 1987 to resolve a number of pending issues in the planned alumina project. Under the terms of this agreement, the Soviet Union would purchase the entire output of the future plant. Moreover, the Soviet Union would be obliged to pay 70% of the value of the alumina in hard currency; 30% of the value would be covered by obligatory Greek purchases of machinery and equipment from the U.S.S.R. needed to operate the plant. Earlier, the Soviet Union agreed to purchase only 380,000 tons of alumina per year over a 10-year period; but following Greece's failure in 1986 and early 1987 to reach a long-term future sales agreement with Bulgaria for 220,000 tons of alumina per year, the Soviet Government announced it was willing to purchase all future alumina output from the proposed plant over a 10-year period. The price of the alumina would be based on an average basket of world producer prices, and linked to free-market quotations. A newly formed subsidiary of the Hellenic Industrial Development Bank (ETVA), Greek Alumina S.A. (ELVA) was designated to manage and operate the plant project. Soviet foreign trade organizations, Tsvetmetpromexport and Raznoimport, would be involved in the supply of equipment and services, respectively, to the alumina project and buy the product.

Under pressure from Greece's environmental and cultural interests, the planned site of the alumina plant was relocated from the historic and archaeologically important Delphi area to Boeotia. Construction management for the project would be carried out by Kaiser Engineers and Constructors of the United States. Outstanding issues concerning the alumina plant at yearend included the need to acquire funds for subsidiary equipment, for infrastructure on the plant site, and for the construction of water-proofed enclosures for red mud.

Chromite.—Late in the year, Hellenic Ferroalloys S.A. announced the construction startup of a new concentrator to raise chromite concentrate production capacity from 60,000 to 120,000 tons per year. Expansion of mine capacity to provide the necessary feed was also begun, and the new facilities were to be operating by late 1988. However, the actual operational startup would depend on a decision on whether to switch over Larco's idle ferronickel capacities to ferrochromium production, or to add entirely new ferrochromium furnaces at the Tsingali ferrochromium plant. By yearend, the issue was still unresolved.

Iron and Steel.—The decision to build a stainless steel plant was again held in abeyance in 1987, owing partly to uncertainty over Larco's future. The original project envisaged a 60,000-ton-per-year plant with smelting, slab casting, and cold-rolling strip facilities.

In 1987, Greek steelmakers charged Bulgaria and Yugoslavia with dumping long and flat-rolled steel products on the Greek market. The Government of Greece had reportedly initiated an inquiry into these allegations during the year, but it did not refer this issue to the EEC for investigation. Reportedly, only Bulgaria had an import-penetration agreement for steel products with the EEC. Yugoslavia's past attempt to reach a similar agreement was blocked by EEC mill operators who felt that the enforcement of antidumping regulations was a more effective method of lowering imports.

The rising cost of electricity was another problem the Greek steel industry faced during the year. To remain competitive, the industry requested a 30% cut in its electric power debt during the year. In midyear, an Athens court granted the Government-owned Public Power Corp. (PPC) the right to seize the property and assets of Metallurgiki Halyps S.A. steelworks for outstanding electric power debts from 1983 to 1986. Reportedly, despite appeals from the plant's personnel and parliamentary representative, the Government refused to assist the steelworks, leading to fears of impending

closure.[4] In past years, the PPC had been implicated in a variety of irregularities concerning overcharging customers. The suit brought against the PPC by Aluminium de Gréce in 1985 for arbitrary overcharging was still to be resolved.

Lead and Zinc.—After a 2-year delay, Aegean Metallurgical Industries S.A. proceeded with plans to construct the initial phase of a lead and zinc mining-and-processing complex at Molai in the Peloponnese. The first project in the initial phase was to be a gold and silver processing unit for high-arsenic pyrite from the Olympias Mine in Khalkidiki. The plant would produce 5 tons of silver, 3 tons of gold, and 330,000 tons of sulfuric acid and arsenic trioxide per year. The second and third phases of the lead-zinc complex would include the development of four mines and the construction of four concentrators. However, by yearend, the construction and development startup schedules remained open.

Nickel.—Since coming under state control in 1985, Larco's difficulties continued to mount. The company's debt doubled to about $220 million, of which a substantial but disputed share was owed to the PPC. Larco's management indicated that the company's debt was no more than 33% of the $200 million owed the PPC, and appealed to the Government for adjudication. In both 1985 and 1986, Larco, Greece's sole producer of ferronickel, was disrupted by strikes and work stoppages that resulted in extended production losses. The strikes were in response to proposed labor cutbacks to maintain competitiveness during a decline in world nickel prices. Larco's management indicated that the company's break-even point was $2.40 to $2.45 per pound of nickel while market prices were $2.20 per pound or less. The company had resumed normal operations by yearend 1986, after winning concessions to cut back the labor force from 2,000 to 1,200 employees, but by mid-1987, the Government decided to sell Larco at a public auction. The company reportedly was operating profitably owing to an improvement in nickel prices. The auction was postponed several times during the year, and in December, it was put off until mid-1988. Other issues that remained unresolved were whether to transfer some of Larco's electric-furnace capacity for the production of ferrochromium under the auspices of Hellenic Ferroalloys S.A., and also, whether there will be a stainless steel capacity to use domestically produced ferroalloys.

Scrap.—Late in the year, construction was started on the infrastructure for Navipe, a major shipbreaking facility at Astakos on Greece's west coast. The startup of the new operation was scheduled for 1988 with a total capacity of 310,000 tons per year. The development of the second stage of the new Navipe facility would include the addition of rolling mills, nonferrous metals remelting units, and foundries. The Navipe shipbreaking project was planned and financed under the auspices of ETVA and the EEC's Integrated Mediterranean Program. The Greek Shipbreakers Association reacted negatively to the project, claiming that ETVA's 1983 feasibility study was outdated because of lower world prices for scrap and the reduction of offers of ships for breakage. The Shipbreakers Association also noted that while existing private yards were already struggling to survive, scrap from the new Navipe facility would have to be trucked to the steel industries at the opposite end of the country, which would necessitate subsidies.

INDUSTRIAL MINERALS

Greece continued to be a substantial world and EEC producer of a wide range of industrial minerals that included asbestos, barite, bentonite, cement, emery, feldspar, gypsum, kaolin, limestone. magnesite, marble, quartz, sulfur, and talc.

Greece was the 15th largest producer of cement in the world and the third largest exporter. It was also the only country in the world to export more cement than it consumed domestically.[5] From 1981, the first year of the current Government, through 1986, exports exceeded consumption by 2%, 9%, 24%, 20%, 28%, and 15%, respectively, owing to Government policies that kept domestic prices below production costs. In 1987, Heracles Cement S.A. invited bids on the delivery of about 500,000 tons of coal in 1988 to its operations in Greece. In mid-December, U.S. coal exporters indicated an inability to compete with cheaper coal from Australia, the Republic of South Africa, and Colombia to supply Heracles.

MINERAL FUELS

Greece maintained an energy policy based on the reduction of imported petroleum and its substitution by domestic sources of lignite, and where possible, by hydroelectric power and domestic production of petroleum and natural gas. In 1986, petroleum's share of total energy consumption was

about 58% as opposed to 76% in 1973. Apart from lignite, the country had few domestic sources of energy; its only indigenous source of petroleum was the small offshore deposit at Prinos in the northern Aegean area. Output at this site has been about 1.3 million tons per year. The associated South Kevala Gasfield maintained a modest output that was used largely for fertilizer production and to boost petroleum recovery. Both fields were operated by NAPC, a consortium led by Denison Mines of Canada.

In 1987, a dispute arose between the Governments of Greece and Turkey over petroleum exploration rights in the Aegean. Although the issue was resolved, the Government of Greece drafted legislation to nationalize NAPC and take over drilling and exploration. The legislation was appealed by the consortium owners to the courts, which ruled it to be unconstitutional. In subsequent negotiations, the Government agreed to let the consortium operate privately, but was assured state control over exploration and drilling programs.

In October, the Governments of Greece and the U.S.S.R. signed a memorandum of understanding for long-term purchases of natural gas from the Soviet Union. The agreement stipulated the construction of a 437-mile spur line to Greece, from the Soviet-Bulgarian gas trunk, that would transport a proposed minimum 35 billion cubic feet of natural gas per year for 25 years. The spur line would be completed by 1992 and would cost approximately $1 billion. It would have sufficient capacity to convey more than 70 billion cubic feet of gas per year. Issues concerning financing, price, and method of payment for purchased gas were to be resolved in separate negotiated agreements between the Soviet foreign trade organization, Soyouzgazexport, and the Public Petroleum Corp. of Greece. Part of the gas would fuel the new alumina plant.

[1]Foreign mineral specialist. Division of International Minerals.
[2]Greece's Weekly. Mar. 28, 1988, pp. 5-8.
[3]Journal of Commerce. Sept. 28, 1987, p. 3A.
[4]Metals Bulletin. Aug. 6, 1987, p. 4.
[5]Ciments et Chaux. Nov. 1987, pp. 15-16.

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